



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,997	11/03/2003	Mark Levine	930009-2015	5362
20/999 7590 11/24/2009 FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151				
EXAMINER				
PIZZALI, ANDREW T				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
11/24/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/699,997
Filing Date: November 03, 2003
Appellant(s): LEVINE ET AL.

Brian McGuire
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/20/2009 appealing from the Office action mailed 6/12/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is substantially correct. The appellant incorrectly asserts that Claim 1 is directed towards an industrial belt. Claim 1 is actually directed towards an industrial fabric (see claims appendix). The appellant also incorrectly asserts that Claim 24 is directed towards an industrial belt polymeric filament. Claim 24 is actually directed towards an industrial fabric polymeric filament (see claims appendix).

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Evidence cited to rebut appellant arguments:

5,998,310	BOWEN	12-1999
-----------	-------	---------

Evidence cited to reject the claims:

6,432,850	TAKAGI	8-2002
-----------	--------	--------

5,744,236	ROHRBACH	4-1998
-----------	----------	--------

4,803,096	KUHN	2-1989
-----------	------	--------

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach.

Regarding claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40, Takagi discloses a conductive fabric comprising a plurality of polymeric filaments having one or more C-shaped grooves formed therein, wherein each filament includes electrically conductive polymer material incorporated as a coating that substantially fills the C-shaped grooves (see entire document including column 1, lines 6-10, column 3, lines 53-64, column 4, lines 8-21 and Figure 1). Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11), therefore, the fabric can at least be compared to a metal-based fabric in terms of conductivity. Considering that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to be resistant to dents and creases.

Takagi does not appear to mention the C-shaped grooves having a mouth with a width less than the central portion of the groove, but Rohrbach clearly discloses that it is known in the multi-lobe polymer fiber art to use C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material inside the filament for increased durability (see entire document including column 1, lines 46-63, column 3, lines 20-27, column 4, lines 5-9, and Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material, as taught by Rohrbach, because the filaments would have increased durability by partially encasing the material within the polymer filament. The C-shaped configuration taught by Rohrbach inherently allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity (see the paragraph bridging pages 5 and 6 of the current specification).

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. *KSR v. Teleflex*.

Regarding the fabric being an industrial fabric used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes, considering the substantially identical fabric taught by the applied prior art, compared to the claimed fabric, it appears that the fabric could be used as claimed. It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, Takagi discloses that the filaments may constitute between thirty and one hundred percent of the fabric (column 3, lines 34-39).

Regarding claims 3 and 4, considering that Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11) and that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to have static dissipation properties equivalent to metal-based fabrics while also having physical properties (modulus, tenacity, strength, adhesion, abrasion resistance, and/or durability) comparable to non-conductive synthetic fabrics.

Regarding claims 7-8 and 27-28, Takagi discloses that the filament may have an oriented structure coated with conductive polymer material (column 4, lines 16-21 and Figure 1).

Regarding claims 8 and 28, Takagi discloses that the fibers may be formed by bicomponent spinning, but Takagi does not appear to specifically mention the claimed method of applying conductive polymer. Considering that substantially identical structure illustrated in Figure 1 of Takagi compared to Figure 1 of the current application, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article.

Regarding claims 11-14, 16, 31-34, 36 and 39-40, Takagi discloses that the filament may be lobed monofilament coated with conductive polymer material (see Figure 1).

Regarding claims 12, 32 and 39-40, Takagi discloses that the fabric, and therefore the coating, may have a conductivity of 10^6 to $10^9 \Omega$ (column 5, lines 15-19).

Regarding claims 13-14, 16, 24, 27-28, 31-34, 36 and 40, Rohrbach discloses that shape of the one or more C-shaped grooves may run along a length of the monofilament such that a mechanical interlock forms between the monofilament and the conductive polymer filling the grooves such that the interlock reduces a need for adhesion of the conductive polymer to the monofilament (column 1, lines 46-63).

Regarding claims 16 and 36, the C-shaped configuration taught by Rohrbach inherently allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity and the positioning of the conductive polymer in the grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties (see the paragraph bridging pages 5 and 6 of the current specification).

Regarding claims 17 and 37, Takagi discloses that the degree of surface area coverage of the conductive fiber is preferably 20 to 70% in consideration of processability, manufacturing costs, and conductivity (column 4, lines 40-51), but Takagi does not specifically mention weight percent of conductive polymer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the weight percent of conductive polymer, such as from 1 to 10%, because it is understood by one of ordinary skill in the art that the weight percent conductive polymer directly affects processability, manufacturing costs, and conductivity and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 19, Takagi discloses that the fabric may be single-layered or multi-layered (column 6, lines 8-14 and Figure 6).

Regarding claim 20, Takagi discloses that the fabric may comprise weft and warp filaments (woven fabric) (column 3, lines 53-64).

Regarding claim 22, Takagi does not specifically mention the claimed use, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed.

3. Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach as applied to claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 above, and further in view of USPN 4,803,096 to Kuhn.

Regarding claims 9-10, 23, 29-30 and 38, Takagi discloses that the conductive polymer may be mixture of a conductive powder with a polymer melt (column 5, lines 38-50), but Takagi does not specifically mention a polyaniline or polypyrrole. Kuhn discloses that it is known in the antistatic fabric art that conductive polymer fibers comprising a mixture of a conductive powder with a polymer may be substituted with polyaniline or polypyrrole conductive polymers to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers (see entire document including column 1, lines 6-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive polymer material from any suitable conductive polymer material, such as a polyaniline or polypyrrole, to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers and because it is within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claims 10 and 30, considering that Kuhn discloses that polyanilines and polypyrrole do not alter the physical properties of the fibers, and considering that the fiber taught by the prior art is substantially identical to the claimed fibers, it appears that the fibers would have physical properties comparable to a polyamide filament.

(10) Response to Argument

Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach.

The appellant asserts that the fabric disclosed by the applied prior art is not capable of being used as an industrial belt because it is described as being used to produce dust proof clothing. Appellant's argument is not persuasive.

The appellant incorrectly asserts that Claim 1 is directed towards an industrial belt. Claim 1 is actually directed towards an industrial fabric (see claims appendix). The appellant also incorrectly asserts that Claim 24 is directed towards an industrial belt polymeric filament. Claim 24 is actually directed towards an industrial fabric polymeric filament (see claims appendix). Although the phrase "industrial fabric" is mentioned in the specification (page 4, lines 5-13) the phrase is not defined by the specification. Therefore, the phrase is given its broadest most reasonable interpretation in view of the specification which is a fabric capable of being used in any industry. Since the phrase does not explicitly or implicitly impart any structure to the claimed fabric, a fabric that may be used to construct a clothing fabric (e.g., dust proof clothing) is considered an industrial fabric.

The appellant asserts that the nylon 6, nylon 66, or PET filaments disclosed by Takagi (paragraph bridging columns 3 and 4) are not capable of being used as industrial belt filaments because Takagi discloses that the filaments have a denier of 10 to 200 (column 4, lines 22-29 and column 5, lines 56-60). The appellant asserts that said filaments are not capable of withstanding the pressure and loads experienced by fabrics used in industrial belts. Appellant's argument is not persuasive.

Firstly, the appellant incorrectly asserts that Claim 1 is directed towards an industrial belt. Claim 1 is actually directed towards an industrial fabric (see claims appendix). The appellant also incorrectly asserts that Claim 24 is directed towards an industrial belt polymeric filament. Claim 24 is actually directed towards an industrial fabric polymeric filament (see claims appendix). Although the phrase "industrial fabric" is mentioned in the specification (page 4, lines 5-13) the phrase is not defined by the specification. Therefore, the phrase is given its broadest most reasonable interpretation in view of the specification which is a fabric capable of being used in any industry. Since the phrase does not explicitly or implicitly impart any structure to the claimed fabric, a fabric that may be used to construct a clothing fabric (e.g., dust proof clothing) is considered an industrial fabric.

Secondly, the appellant asserts that industrial belts "typically" use yarns having a larger diameter and that industrial belts "typically" use yarns with linear density of around 2444 denier or higher. The appellant has failed to show that said fiber diameter or denier is necessary.

Thirdly, it is noted the features upon which appellant relies (i.e., filament diameter and filament denier) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Fourthly, the evidence fails to support the notion that all industrial belt filaments must have a denier of greater than 200 denier. Even though the fabrics of the Exhibits appear to utilize larger denier filaments, this showing falls well short of demonstrating that all industrial belts require said filament denier. To rebut appellant the examiner points to USPN 5,998,310 to Bowen which was cited by the appellant on the IDS filed 3/8/2004. Bowen discloses that it is known in the papermaking (industrial) belt art that industrial belt nylon-6, nylon 66, or PET filaments may be constructed with a denier as low as 100 (column 1, lines 11-22 and column 5, lines 16-40).

The appellant asserts that the filament C-shaped groove structure illustrated in Figure 3 of Rohrbach would not allow for the currently claimed continued exposure of the conductive polymer to the filament surface as the monofilament wears because Rohrbach discloses that when the tops or caps were removed the filler material was not retained by the filament. The examiner respectfully disagrees.

Firstly, the feature upon which appellant relies (i.e., filler material remains entrapped when the top or caps removed from the filament) is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Secondly, when the terms are given their broadest reasonable interpretation based on their plain meanings, one skilled in the relevant art would have understood the phrase “allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears,” to read on a characteristic of the grooves to retain the filler material during any amount of wear. Thus, upon only slight wear, in which the caps or tops are not removed, the C-shaped groove structure illustrated in Figure 3 of Rohrbach would clearly function as currently claimed.

Thirdly, the current specification teaches that a C-shaped groove shape is the structure responsible for the currently claimed wear characteristic (paragraph bridging pages 5 and 6). Considering that the applied prior art teaches C-shaped grooves it inherently possesses the claimed wear characteristic.

The appellant also asserts that Takagi and Rohrbach are non-analogous because they allegedly do not relate to industrial belts. The examiner respectfully disagrees.

Firstly, the appellant incorrectly asserts that Claim 1 is directed towards an industrial belt. Claim 1 is actually directed towards an industrial fabric (see claims appendix). The appellant also incorrectly asserts that Claim 24 is directed towards an industrial belt polymeric filament. Claim 24 is actually directed towards an industrial fabric polymeric filament (see claims appendix). Although the phrase “industrial fabric” is mentioned in the specification (page 4, lines 5-13) the phrase is not defined by the specification. Therefore, the phrase is given its broadest most reasonable interpretation in view of the specification which is a fabric capable of being used in any industry. Since the phrase does not explicitly or implicitly impart any structure to the claimed fabric, a fabric that may be used to construct a clothing fabric (e.g., dust proof clothing) is considered an industrial fabric.

Secondly, both of the references relate to polymeric filaments with C-shaped grooves.

Thirdly, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. One must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *KSR v. Teleflex*.

Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach as applied to claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 above, and further in view of USPN 4,803,096 to Kuhn.

The appellant fails to separately argue the claims.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 1794

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Andrew T Piziali/

Primary Examiner, Art Unit 1794

Conferees:

/Rena L. Dye/

Supervisory Patent Examiner, Art Unit 1794

/Jennifer K. Michener/

Supervisory Patent Examiner, Art Unit 1795